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## **EARLY DETECTION OF SOCIAL ANXIETY: RELIABILITY AND VALIDITY OF A TEACHER QUESTIONNAIRE FOR THE IDENTIFICATION OF SOCIAL ANXIETY IN YOUNG CHILDREN**

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Socially anxious children have been described in the literature as at risk of developing increasing emotional problems and of being deprived of valid learning experiences with peers. In order to enable teachers to detect social anxiety in preschoolers the authors developed a scale. The TRSA-"junior" (Teacher Rating Scale of Social Anxiety-"junior") is a brief Likert-type questionnaire for the identification of social anxiety in 5-to 6-year-old children. Reliability (internal consistency plus test-retest correlation) collected in 2 samples was high. Convergent and divergent validity of this newly developed rating-scale were also studied. A high level of social anxiety correlated with a low level of social participation, as observed on the playground. The TRSA-"junior" score correlated with "internalizing" as measured by the Behavior Questionnaire for Toddlers and Preschoolers (BQTP) and the Child Behavior Check List (CBCL), and with the subscales "anxious-depressed", "thought problems", "social problems" and "withdrawn behavior" of the CBCL. In the second study a high score on social anxiety appeared to be related to less positive sociometric judgments by peers. The authors conclude that the TRSA-"junior" may aid in the identification and prevention of social anxiety at an early age. In addition, the scale would appear to be a useful instrument in research, given its sound psychometric qualities.

In the literature interactions with peers and friendships are considered important for the social and emotional development of children (Hartup, 1996). Children with satisfying peer relationships are more socially competent and achieve better at school (Ladd, Kochenderfer, & Coleman, 1996). Children who

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withdraw from social contacts are seen as deprived of social learning opportunities (Renshaw & Brown, 1993), which may cause problems at a later age (Kochenderfer & Ladd, 1996). Within the group of withdrawn children Coplan, Rubin, Fox, Calkins, and Steward (1994) distinguish three subtypes: *solitary-passive*, children who like to play alone, *solitary-active*, children who are rejected and isolated by their peers because of their sometimes aggressive, acting-out behavior, and *reticent*, socially anxious children, who are afraid of making contact with their classmates (Cheah, Rubin, Fox, & Calkins, 1996) and suffer from what Asendorpf (1990) called an "approach-avoidance" conflict (see also Harrit, Zaia, Bates, Dodge, & Pettit, 1997).

Schlenker and Leary (1982) describe *social anxiety as the fear of negative evaluation in social situations*. It appears that the incidence of social anxiety is high (Meijers, 1978), even at a very young age, and leads to a negative self-image (Olweus, 1993). A recent study (Bokhorst, Goossens, Camodeca, Stegge, & de Ruyter, 1999) demonstrated that socially anxious pupils (aged 11) suffered from a lower self-esteem and higher depression than their peers. In another study with 9 to 12-year-old children in elementary school Bokhorst, Goossens, and de Ruyter (1995) used a teacher questionnaire (Teacher Rating Scale of Social Anxiety-"senior") in addition to a self-report measure (SAS-K; Dekking, 1983). This TRSA-"senior" correlated significantly with the self-report measure of social anxiety. The TRSA-"senior" served as the basis for the present authors' junior version. As there is still a shortage of instruments for the behavioral description of preschoolers, who cannot yet report reliably about themselves, they opted for the use of the teachers' questionnaire on the grounds of its cost-effectiveness. In this paper, data about the internal consistency and the test-retest reliability of this TRSA-"junior" are presented first.

Researchers interested in children's behavior can make use of three different types of informants: teachers, peers, and observers. Measures obtained from these informants possess differing methodological strengths and weaknesses. Since the TRSA-"junior" is to be filled in by teachers, the authors decided to rely on peers and observers for validation. Observations have the advantage of objectivity, but the disadvantage of being labor-intensive and usually limited to some samples of behavior. According to Coplan et al. (1994) socially anxious children avoid contact with peers. The authors opted for observations during recess, because there the observers would be less obviously visible than within the confines of the classroom (Boulton, 1999). Also, the schoolyard tends to be the place where interactions between peers take place most spontaneously. They expected socially anxious children to be less competent in their exchanges with peers (cf. also Rubin & Clark, 1983).

Young children have been depicted as poor informants about some types of behavior, because of a lack of skills (Younger, Schwarzman, & Ledingham,

1985). However, they would appear to be capable of expressing likes and dislikes. These preferences have been found to be stable and to be predictably related to behaviors reported by teachers (Asher, Singleton, Tinsley, & Hymel, 1979; Rubin & Clark, 1983). Thus, children with externalizing behaviors are usually disliked, while those with prosocial behavior are usually liked from very early on. Withdrawn children usually take up an intermediate position (Graham & Hoehn, 1995). They are neither strongly liked nor disliked. In the second study the authors correlated teacher judgments as in the TRSA-“junior” with socio-metric ratings (Asher et al., 1979). Teachers are usually sophisticated judges of children’s behaviors. They spend a lot of time with them, have plenty of opportunity to see the children in a variety of contexts and are usually well trained for assessing the behavior of children in their care (Ladd & Profilet, 1996). In order to further validate teachers’ assessments in the TRSA-“junior”, they were asked to fill in the Behavioral Questionnaire for Toddlers and Preschoolers (BQTP; Goossens, Dekker, Bruinsma, & de Ruyter, 2001) and the Child Behavior Check List (Achenbach & Edelbrock, 1986). The BQTP is designed to assess anxious/withdrawn behavior and aggressive/disturbing behavior, and has been well validated in the Netherlands. The CBCL is a well-known, well standardized and well validated questionnaire for mapping problem behavior in children. The BQTP and the CBCL were used to further study the convergent and divergent validity of the TRSA-“junior”.

## STUDY 1

### METHOD

**Procedure and sample.** The sample consisted of 173 children (80 girls and 93 boys). These were nearly all children in grades 1 and 2 from two different protestant elementary schools in small towns in the Dutch province of North-Holland. At the first data collection (T1) seven teachers filled in the TRSA and the BQTP for the children, whom they had known for 12.6 months ( $SD = 5.6$  months) on average. Except for one child, the teachers had been acquainted with each child for at least eight months. The observations took place in the winter of the following year (about six months later). At T3, which took place one year after T1, the teachers again filled in the TRSA and the BQTP. In addition, they filled in the CBCL. At this time the teachers had been acquainted with their pupils for about 14.7 months ( $SD = 5.7$  months). At T1 the children were, on average, 66 months old ( $SD = 7.5$  months; range 50–82 months). At T3 the children were in grades 2 and 3. More than two-thirds of the children were by then in the class of a different teacher.

## MEASURES

**Teacher Rating Scale of Social Anxiety.** The Teacher Rating Scale of Social Anxiety (TRSA) is a Likert-type teacher questionnaire of ten items for the identification of social anxiety. An example of an item is: *When he/she is asked to say something in front of the class he/she is ...absolutely not afraid, not afraid, just as afraid as the other children, afraid, very afraid.* A higher score indicates more social anxiety. Psychometric data are presented in the results paragraph.

**Behavioral Questionnaire for Toddlers and Preschoolers.** The Behavioral Questionnaire for Toddlers and Preschoolers (BQTP) is designed to measure problem behavior in young children (2-6 years). About half of the questionnaire consists of items from the Preschool Behavior Questionnaire (Behar & Stringfield, 1974). Other items were collected from teachers in preschools and day-care centers. The total number of items is 41. Reliability and validity of the questionnaire have been established in a variety of studies involving over 1100 children (Goossens et al., 2001). The last item *Do you think that this child has behavior problems?* (answers: *absolutely not, hardly, just some, many, very many*) is meant to reflect a total impression. Factor analysis of the total questionnaire, with the exception of this last item, showed a clear two-factor structure: "aggressive/disruptive" and "anxious/withdrawn" behavior. An example of an item of the first scale is: *Kicks or hits other children*, with alternative responses from (1) *absolutely not characteristic* to (4) *very characteristic*. An example of an item of the second scale is: *...is rather on his own*, with the same alternative responses.

At T1 Cronbach's alpha for "aggressive/disruptive" behavior was .94 (item-total correlations .45 to .83). For "anxious/withdrawn" behavior reliability was .83 (item-total correlations .42 to .64). At T3 the same factors were found as at T1. Cronbach's alpha for "aggressive/disruptive" behavior was now .91 (item-total correlations .36 to .79). For "anxious/withdrawn" behavior reliability was .87 (item-total correlations .51 to .71). Because of a relatively strong, positively skewed partition scores on both moments were transformed by extracting their root values.

**Child Behavior Check List.** The Child Behavior Check List (CBCL) was designed by Achenbach and Edelbrock (1986) to measure skills and problem behavior in 4- to 16-year-old children. The authors used the Dutch version of the TRF (Teacher's Report Form). From this questionnaire they analysed the section on problem behavior, which consists of 113 items with scores on a 3-point response scale (*doesn't apply, applies sometimes, certainly applies*). The CBCL consists of the following subscales: *Aggressive Behavior, Withdrawn Behavior, Somatic Complaints, Anxious-Depressed, Social Problems, Thought Problems, Attention Problems and Delinquent Behavior.* On the basis of these subscales

two broad-band syndromes are distinguished: *Externalizing and Internalizing*. The CBCL is an extensively studied, reliable, and valid instrument (Verhulst, Koot, Akkerhuis & Veerman, 1990).

**Observations of social participation.** At T2 children were observed during recess using the scale, developed by Parten (1932; Bakeman & Brownlee, 1980; Smith, 1978), which distinguishes between 5 levels of increasing social participation: (1) *Unoccupied* or *Onlooking* (subsumed together by the present authors), (2) *Solitary play*, (3) *Parallel play* (the child plays near others and performs the same activities), (4) *Associative play* (situations of deliberation or attempts to do so/contact with one or more other children without a common goal or structure). Included here were Rough-and-tumble-play (contact in some playful or aggressive way) and (5) *Cooperative play* (some common agreements are made). To these categories was added a sixth: *Aggressive behavior* (actions intended to hurt another by physical force, humiliation or insulting).

Each child was followed continuously during one minute each time over a period of 4 months and for a total number of 5 minutes ("focal subject sampling"; Pellegrini, 1996). Assignment to observations occurred at random. Observers registered both onset and termination of one of the six designated behaviors. Four observers were trained until the inter-observer reliability was high (all  $r$ 's  $> .80$ ). All inter-observer agreements were subsequently reassessed. These ran from .73 for "Associative play" to .98 for "Cooperative play". "Aggression" (6) occurred infrequently and was deleted. An average score was computed (AVER-OBS) on the remaining ranked Parten scores ("Unoccupied/onlooking" = 1, "Solitary" = 2, "Parallel play" = 3, "Associative play" = 4, and "Cooperative play" = 5). For example: a child who was observed for one minute in category 1, 30 seconds in category 2, 90 seconds in category 3, 60 seconds in category 4, and 60 seconds in category 5 received a total score of  $(60 \times 1) + (30 \times 2) + (90 \times 3) + (60 \times 4) + (60 \times 5) = 930$ . This score was divided by the total number of seconds (300), so that the final score for this child was 3.1.

The consistency of the observations was checked by comparing the total scores for each minute with the overall score for the five minutes. Correlations ranged from .50 to .59, indicating a reasonable degree of consistency.

## RESULTS

The TRSA was scaled optimally by means of a multi-dimensional scaling technique (HOMALS). One item was left out because of a low discriminant value ( $< .25$ ). Factor analysis showed the same results. Cronbach's alpha at T1 was: .90 (all item-total correlations were .46 or more). The average total-score was 22.5 ( $SD = 5.7$ ; range 10-34). There were no gender differences ( $t = -1.43$ ;  $ns$ ; two-tailed). At T3 alpha was .90 (all item-total correlations were .48 or more). The

average score was now: 21.7 ( $SD = 5.59$ ; range 9-34). Girls scored significantly lower this time than boys ( $t = -2.65$ ;  $p = .01$ ; two-tailed).

The test-retest stability of the TRSA was .48; it was .56 for the girls and .41 for the boys ( $p = .00$  throughout).

The TRSA scores correlated negatively with the average score of social participation at both times. The correlation of the TRSA at T1 with AVEROBS was  $-.16$  ( $p = .02$ ) and of the TRSA at T3 with AVEROBS  $-.18$  ( $p = .01$ ). Both times a modest negative correlation was found between the level of social anxiety according to the teachers, and the level of social participation during recess. At T1 the TRSA correlated positively with the observation category "solitary" ( $r = .16$ ;  $p = .02$ ) and at both times negatively with the category "cooperative" (at T1:  $r = -.15$ ;  $p = .02$  and at T3:  $r = -.14$ ;  $p = .04$ ). In addition, the means of the TRSA scores were computed at T1 and at T3. The correlation of this mean score was  $-.19$  ( $p < .05$ ) with AVEROBS and  $-.19$  ( $p < .05$ ) with the category "cooperative". While these correlations are modest, they do establish a fairly consistent correlation between teachers' views of children's social anxiety in the classroom and a low level of social participation during recess. It is important to remember that there was a six-month interval between T1 and T2 as well as between T2 and T3.

There was a strong correlation between the TRSA score and the "anxious/withdrawn" scale of the BQTP. At T1 this correlation was  $.57$  ( $p < .001$ ) and at T3 it was  $.69$  ( $p < .001$ ). The TRSA showed no significant correlation with the "aggressive/disruptive" scale of the BQTP (at T1 the correlation was  $-.01$  ( $ns$ ), and at T3 it was  $-.06$  ( $ns$ )).

The correlations of the TRSA with the subscales of the CBCL are shown in Table 1. The TRSA correlates positively with the subscales *Withdrawn Behavior*, *Anxious-Depressed*, *Social Problems*, *Thought Problems*, and the broad-band syndrome *Internalizing*, and negatively with the subscales *Aggressive Behavior* and *Delinquent Behavior*.

Thus, the data support the validity of the TRSA scale by way of modest correlations with degree of social participation during recess. Correlations with other teacher ratings (BQTP at T1 and T3; CBCL at T3) indicate more strongly the anxious and withdrawn qualities underlying the concept of social anxiety. TRSA scores do not seem to be related to externalizing qualities. However, the majority of the data in this study were supplied by teachers, about one third of whom were the same person at both times of measurement. Moreover, correlations between teacher ratings at T3 were highest, indicating that common variance caused by the fact that the same people were filling in the questionnaires may have influenced the results. It is for this reason that the authors set up study 2, in which teacher ratings were correlated with peer judgments of popularity.

TABLE 1  
CORRELATIONS OF TRSA-SCORES WITH CBCL-SCORES

	TRSA		
	(T1)	(T3)	((T1 + T3) / 2)
<b>CBCL</b>			
Aggressive Behavior		-.17*	
Withdrawn Behavior	.29*	.54**	.48**
Somatic Complaints			
Anxious-Depressed	.24**	.33**	.33**
Social Problems	.17*	.16*	.19*
Thought Problems	.19*	.19*	.22*
Attention Problems	.16*		
Delinquent Behavior		-.15*	
<b>Externalizing</b>			
	.32**	.47**	.46**
<b>Internalizing</b>			

\*  $p < .05$ . \*\*  $p < .01$ .

## STUDY 2

### METHOD

**Procedure and sample.** In this study the sample consisted of 285 children, 144 girls and 141 boys. These were nearly all children of grades 1 and 2 from 4 different elementary schools in small towns in the Dutch provinces of North-Holland, Utrecht and North-Brabant. The TRSA was filled in by fourteen teachers who had been acquainted with their pupils about one year on average ( $SD = 9$  months). The children's average age was 66 months ( $SD = 9$  months; range 49-89 months). Correlation between the TRSA "junior" and ratings by peers, collected in the following way, were investigated.

### MEASURES

**Peer ratings.** The procedure of Asher et al. (1979) was used to assess the level of acceptance by classmates. Each child was given a photograph of a classmate and asked to imagine how he/she would feel if he/she were to play with this classmate. Three post boxes were put in front of the children. On these post boxes were three drawings of faces with a cheerful, a neutral, and an angry/sad expression. If the child liked playing with that classmate, he/she had to put the photograph of that child in the post box with the cheerful face. If the child did not like playing with that classmate, the photograph had to be put in the post box



with the angry/sad face. If the child did not have either positive or negative feelings, the photograph had to be put in the post box with the neutral face. Each child could thus be given positive, neutral and negative ratings. These ratings were added up per child and then divided by the number of children in the class minus one – a procedure which effectively increased the comparability of the figures across the different classrooms.

**BQTP and TRSA.** Again in this study teachers filled in the BQTP and the TRSA. The alpha for the “aggressive/disruptive” scale of the BQTP was .93 (item-total correlations  $> .46$ ), while that of the “anxious/withdrawn” scale was: .87 (item-total correlations  $> .46$ ).

## RESULTS

Again the TRSA was scaled with HOMALS, and the same item as in sample 1 was deleted so that the final version of the TRSA consisted of 9 items. Reliability was  $= .85$  (item-total correlations ran from .38 to .75), and the average score was 21.88 ( $SD = 4.87$ ; range 9-33). No differences for gender were found ( $F(280, 75) = -.72$ ; *ns*).

In order to examine the relation between the TRSA score and the positive, neutral, and negative ratings 3 groups were formed on the basis of the TRSA scores: a group of “highly socially anxious” children (children who scored more than one  $SD$  above the mean), an “average” group (between one  $SD$  above and one  $SD$  below the mean), and a group “not socially anxious” (children who scored more than one  $SD$  below the average). A MANOVA was carried out with the 3 groups as a factor and the 3 different ratings as dependent variables. A significant relation was found (Wilks  $= .94$ ;  $F(6, 560) = 3.12$ ;  $p < .01$ ). Univariate analyses of variance showed significant effects for both positive and neutral ratings and a trend for the negative ratings ( $F(2, 282) =$  respectively 3.97 ( $p < .03$ ), 4.01 ( $p < .02$ ) and 2.77 ( $p < .07$ )). Post hoc analyses showed that the group of “socially anxious” children received less positive rating scores and more neutral ratings than the other 2 groups (Student-Newman-Keuls;  $p < .05$ ). The socially anxious children also received the highest number of negative ratings, although this effect approached only conventional levels of alpha.

In this sample the TRSA score correlated strongly with the “anxious/withdrawn” scale of the BQTP ( $r = .63$ ;  $p < .01$ ) and not at all with the “aggressive/disruptive” scale of the BQTP ( $r = .03$ ; *ns*).

## GENERAL DISCUSSION

Teachers appear to be able to judge their pupils consistently with a brief Likert-type questionnaire such as the TRSA-“junior”. The internal consistency coeffi-

cients were high in both study 1 and study 2. Item-total coefficients also easily met conventional requirements. The test-retest reliability was satisfactory too, especially taking into account that the interval between the 2 times of measurement was one year. Over such relatively long periods of time coefficients of .40 to .60 are generally considered satisfactory to good. In addition, the subjects assessed with the TRSA-"junior" were still very young; their behavior may still be subject to considerable change. Most of such test-retest coefficients presented earlier have related to judgments by peers (Moskowitz, Schwarzman, & Ledingham, 1985) or observations (Rubin, Hymel, & Mills, 1989), but here these were able to be presented on a teacher-measure basis. The test-retest coefficient was even more impressive when the same teacher filled in the TRSA at both the first and second time of measurement. Admittedly, the test-retest coefficient was lower when different teachers filled in the TRSA at the two points of time. However, even then the coefficient indicated a moderate degree of stability of the behavior as rated. It is tempting to view this result as support for the robustness of the scale. Moreover, the analyses used to examine scale homogeneity and dimensionality produced very similar findings in 2 studies, suggesting that these psychometric properties replicate across samples.

The validity of the TRSA-"junior" was examined by studying its relation to both conceptually similar and dissimilar measures. Without exception the TRSA bore a strong relation to measures of the same, or closely-related, behaviors and no relation to measures of different behavior. Such a pattern is best interpreted as support for the construct validity of the TRSA "junior". However, these relationships may be artificially high because the same teachers supplied the data for the TRSA-"junior", the BTQP and the CBCL.

Support for the construct and predictive validity was obtained from systematic observations during recess. It was shown that children who were judged to be socially anxious by teachers on the basis of their classroom behavior displayed low levels of social involvement with their peers during recess. The correlation coefficients showing this link were moderate at best, but there may be a number of reasons for this. First, the TRSA items describe behavior in the classroom, while the observations took place on the playground. Secondly, the observations took place approximately 6 months later than the first TRSA measurement and also approximately 6 months before the second TRSA measurement. It is highly likely that both the difference in context and the difference in time have suppressed the degree of correlation. Thirdly, moderate correlation coefficients would appear to be within the expected range when looking for relationships between global judgments on questionnaires on the one hand and systematic observations on the other (Ladd & Profilet, 1996).

Peer judgments were included in this study, as peers can be conceived of as important witnesses of other children's behavior. Here the authors sought to

replicate the well-known finding that low degrees of social involvement are not facilitative of peer acceptance (Rubin & Clark, 1983; Ladd & Profilet, 1996). The data bore out this expectation, indicating that what had been perceived by the teachers in the TRSA had also been noticed by the peers. Overall, low social involvement is usually not strongly associated with peer rejection. While the socially anxious subjects in study 2 received few positive ratings (expected) and the highest neutral ratings (expected), they also received the highest negative ratings (unexpected). It may be that the authors' measure of "highly socially anxious", that is, more than 1 *SD* above the mean, also included children whom Rubin and Asendorpf (1993) describe as "social isolates". These social isolates are children who are outgoing and interested in contact with peers ("high on approach and on social motivation"), but are ignored by their peers because of their inept behavior.

The authors are inclined not to pay too much attention to the result (found at T3 in study 1), that girls were less socially anxious than boys. This was found neither at T1 nor in study 2. It could be that there was some temporary increase among the boys, and/or a decrease among the girls at that particular age. On self-report measures the authors have in the past found gender differences indicating that girls report more social anxiety than do boys (Bokhorst et al., 1995; Dekking, 1983).

In sum, the TRSA-"junior" shows considerable promise as a tool that can be used to gather data on one particular form of behavior, that is, social anxiety. However, this is only a first attempt at validating this scale for a young age group. All instruments have their limitations and instrument development is a never-ending process. For this reason, the present authors invite colleagues to elaborate on the psychometric qualities, validity and usefulness of the instrument.

The TRSA-"junior" seems to be a useful instrument in the short and middle run. However, at this point in time there are no data about the relationship between the TRSA-"junior" scores and long-term behavior. Both Rubin and Clark (1983) and Asendorpf (1990) claim that social anxiety is a risk factor in the long run. The authors are at present preparing a manuscript in which that claim is tested, because they find it important to map those risks and to test what can be done to reduce the negative consequences of social anxiety (Bokhorst, Goossens, Bokhorst, Dekker, & de Ruyter, 2001).

The TRSA-"junior" is a questionnaire for use by teachers. It is brief and easy to administer and can be used at a time when very few data are yet available about the children in their care, that is, at the very beginning of their elementary school career. The advantage of this instrument is that it does not take much time or effort on the part of the teacher. However, the instrument is also limited in that it aims to measure only one characteristic. For those who want a more com-

prehensive questionnaire, assessing numerous characteristics there are good options such as the Preschool Behavior Questionnaire (Behar & Stringfield, 1974), the Child Behavior Scale (Ladd & Profilet, 1996) or the Child Behavior Checklist (Achenbach & Edelbrock, 1986).

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